

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **18 OCTOBER 2005 (18.10.2005)**

Applicant's or agent's file reference
PCT04-059

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2005/002078

International filing date (day/month/year)

30 JUNE 2005 (30.06.2005)

Priority date(day/month/year)

10 SEPTEMBER 2004 (10.09.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC7 H01B 11/22

Applicant

LS Cable Ltd. et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office
920 Dunsan-dong, Seo-gu, Daejeon
302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Date of completion of this opinion

18 OCTOBER 2005 (18.10.2005)

Authorized officer

PARK, Jin Seok

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**WRITTEN OPINION OF THE
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Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ on paper
☐ in electronic form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in electronic form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	1-8	YES
	Claims		NO
Inventive step (IS)	Claims	4-8	YES
	Claims	1-3	NO
Industrial applicability (IA)	Claims	1-8	YES
	Claims		NO

2. Citations and explanations :

Reference is made to the following documents:

D1: US 5897103 A (27 Apr. 1999)

D2: US 6049647 A (11 Apr. 2000)

1. Novelty

Claims 1-8 of the present invention are considered to be novel considering the available prior art, because none of cited prior art describes the technical elements and their structural relationships as specifically set out in the claims of the invention.

2. Inventive step

The subject matter of the present invention relates to a method of installing electric power cables with optical fiber composite and cable structure therefor. It is intended to reduce power loss while installing electric power cables with optical fiber composite. A characteristic feature of this invention is that it employs a method of using air pressure for the installation of the cables. According to claim 1 of this invention, the primary technical elements of this invention include: a step for installing power cables with conductor and tubes for air pressure installation; a step for connecting tubes of adjacent power cables; and a step for installing optical fiber units into the connected tubes by air pressure.

Further, another embodiment of this invention recited in claim 3 discloses the structure of a power cable characterized in that: it has a conductor, an insulator, and tubes used for air pressure installation; and an anticorrosive layer.

The cited prior art D1 discloses a method of installing cables in cable ducts using installation

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of :

Box. No. V

Another cited prior art, D2 is directed to a composite fiber optic cable having a fiber optic core section. It also discloses a conductor and water blocking section. In particular, it provides a similar structure of power cables to that of the present invention. Although tubes used for air pressure installation is not directly disclosed in D2, they can be anticipated by a person skilled in the art by the technical features disclosed in D1. Accordingly, technical elements of claim 3 of the present invention can be anticipated by a person skilled in the art by combining the technical features disclosed in D1 and D2.

Consequently, claims 1-3 of the present invention do not involve an inventive step under Article 33(3) PCT.

3. Industrial applicability

Claims 1-8 meet the criteria of PCT Article 33(4) because this invention has applications for installing power cables.